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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/203,853	12/02/1998	DAVID WILLIAM WIGGINS	492-1007	4737
23644	7590	02/25/2005	EXAMINER	
BARNES & THORNBURG P.O. BOX 2786 CHICAGO, IL 60690-2786			LY, ANH VU H	
			ART UNIT	PAPER NUMBER
			2667	

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/203,853

Applicant(s)

WIGGINS ET AL.

Examiner

Anh-Vu H Ly

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-84 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-84 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>November 15, 2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramakrishnan (US Patent No. 6,167,029) in view of Klish (US Patent No. 6,014,708).

With respect to claims 1, 16, 30, 45, 61, 66, 73, and 78, Ramakrishnan discloses (col. 7, lines 20-45) that when frames from a sending station are received at a receiving station, the received frames are buffered in the received buffer 606. Herein, frames are transmitted at a data rate (first rate) (receiving frame based data at a first rate and configuring a buffer to receive the frame based data). The received buffer 606 is associated with a level indicator that is able to indicate the level of utilization of the storage capacity of the buffer (predetermining a data amount threshold level for the buffer). When the amount of data stored in the receiving buffer 606 reaches the AF level 608 (with respect to threshold level, monitoring an amount of transmitted frame based data that has been received), then the MAC control 602 produces and issues a pause frame (in response to step of monitoring the amount of data received, generating a signal) to the sending station to inform to the sending station that data transmission to the receiving buffer 606 should temporarily be stopped. Herein, no data transmissions imply a data rate of zero (second rate) (wherein signal is configurable to adapt first rate of transmission from frame based data channel interface to a second rate). Ramakrishnan does not disclose that frame

Art Unit: 2667

based data are transmitted over a synchronous digital network. Klish discloses in Figs. 1A-1B, systems and methods for mapping Fast Ethernet payload input signal to a synchronous payload envelope for transmissions over the synchronous networks. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the adaptors in Ramakrishnan's system, as suggested by Klish, to map Ethernet data to SONET/SDH frames for transmissions over synchronous networks since SONET/SDH networks carry data at higher data rates.

With respect to claims 2, 31, 62, and 74, Ramakrishnan discloses in Fig. 2C, an Ethernet network (data is received directly from an Ethernet LAN).

With respect to claims 3-4, 17-18, 32-33, 46-47, 63, and 75, Ramakrishnan discloses in Fig. 2C, an Ethernet network. Ramakrishnan does not disclose that the network further comprises SDH/SONET networks. Klish discloses in Figs. 1A-1B, Ethernet over SONET or SDH networks. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include Ethernet over SONET/SDH networks in Ramakrishnan's system, as suggested by Klish, to carry data at higher data rates.

With respect to claims 5, 19, 34, and 48, Ramakrishnan discloses in Figs. 7 and 8, flow diagrams for transmitting and receiving pause frames between network entities (receiving one or more pause frames generated by a local area network switch).

Art Unit: 2667

With respect to claims 6, 20, 35, 49, 64, and 76, Ramakrishnan discloses in Fig. 6, the switch comprises receive buffer 606 (wherein buffer comprises data storage locations configurable to store at least one data frame) and transmit buffer 604.

With respect to claims 7, 21, 36, 50, 65, and 77, Ramakrishnan discloses in Fig. 6, the switch comprises receive buffer 606 for storing received data. Herein, the buffer stores at least an Ethernet data frame (buffer comprises a size equal to a number of maximum length Ethernet frames, said number being selectable from the set comprising 4 and 6).

With respect to claims 8, 22, 37, and 51, Ramakrishnan discloses (col. 7, line 18) that the buffers 604 and 606 are FIFOs (wherein buffer is configured as FIFO queue).

With respect to claims 9, 23, 38, and 52, Ramakrishnan discloses in Fig. 6, the switch comprises receive buffer 606 for storing received data. Ramakrishnan does not disclose the buffer is configured as circular buffer. However, circular buffer is well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include circular buffer in Ramakrishnan's system, since circular buffer including pointers for pointing to next data object in the buffer and length value that specifies how many objects are currently in the buffer.

Art Unit: 2667

With respect to claims 10, 24, 39, 53, 67, 79, and 84, Ramakrishnan discloses in Fig. 7, that the whether the capacity is greater than a threshold (determining if amount is less than a threshold value).

With respect to claims 11, 25, 40, 54, 68, and 80, Ramakrishnan discloses in Fig. 7, that a pause frame is generated if the buffer level greater than the upper threshold. Herein, the pause frame is received at the interface of the switch before forwarding to the transmitting source (signal is generated and sent to local interface if amount of frame based data received is not less than the threshold level).

With respect to claim 12, Ramakrishnan discloses (col. 9, lines 17-19) that when either the decision blocks 706 and 708 signal that either of the threshold conditions are exceeded, a pause frame is then generated 710 (a decision to generate signal is made substantially immediately).

With respect to claims 13, 28, 41, 42, 55, 59, and 72, Ramakrishnan discloses (col. 9, lines 22-28) that the pause frame is sent to station 1 as a next frame to be transmitted (the signal is transmitted to the local interface upon another frame, currently being transmitted to the local interface, being completed).

With respect to claims 14, 27, 43, 58, 59, 69, 71, 81, and 83, Ramakrishnan discloses (col. 9, lines 64-66) that following the decision block when a pause frame has been received,

station 1 stops transmitting to station 2 for a pause period (pause frame specifying a predetermined time interval for inhibiting further transmissions from local frame based data channel interface).

With respect to claims 15, 29, 44, and 60, Ramakrishnan discloses (col. 7, lines 29-33) that the AF level 608 indicates the amount of data stored in the receive buffer 606 is nearing its maximum capacity. The AF level can indicate that the receive buffer is at 95% capacity. Herein, a few more Ethernet frames can be stored above the AF level (buffer comprises, above threshold level, an amount of data storage capacity equal to the size of two maximum length Ethernet frames).

With respect to claims 26, 56, 57, 70, and 82, Ramakrishnan discloses in Figs. 7 and 8, methods for generating pause frames in Ethernet networks. Ramakrishnan does not disclose that pause frames are incorporated in one or more virtual containers. Klish discloses in Figs. 1A-1B, Ethernet over SONET or SDH networks. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include Ethernet over SONET/SDH networks in Ramakrishnan's system, as suggested by Klish, to carry data at higher data rates.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2667

Russell et al (US Patent No. 6,584,118 B1) discloses payload mapping in synchronous networks.

Russell et al (US Patent No. 6,816,496 B2) discloses frame based data transmission over synchronous digital hierarchy network.

Russell et al (US Patent No. 6,704,326 B2) discloses payload mapping in synchronous networks.

Russell et al (US Patent No. 6,496,519 B1) discloses frame based data transmission over synchronous digital hierarchy network.

Klingelhofer (US Patent No. 5,884,099) discloses control circuit for a buffer memory to transfer data between systems operating at different speeds.

Kalkunte et al (US Patent No. 6,118,761) discloses apparatus and method for generating rate control frames in a workgroup switch based on traffic contribution from a network switch port.

Mangin et al (US Patent No. 6,222,825 B1) discloses arrangement for determining link latency for maintaining flow control in full duplex networks.

Linville et al (US Patent No. 6,170,022 B1) discloses method and system for monitoring and controlling data flow in a network congestion state by changing each calculated pause time by a random amount.


3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh-Vu H Ly whose telephone number is 571-272-3175. The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

Art Unit: 2667

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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